

## ABSTRACT OF THE DISCLOSURE

### APPARATUS AND METHOD FOR MONITORING SYSTEM HEALTH BASED ON FUZZY METRIC DATA RANGES AND FUZZY RULES

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A method and apparatus for determining the status of a computer system and software applications running on that system and displaying the status to a system administrator are provided. With the apparatus and method, metrics related to a particular application or subsystem are identified and then collected over a predetermined  
10 period of time using a data monitoring or collection facility to generate metric history data. Once collected, the metric history data is analyzed by computing a set of parameters representing statistical measures of the metric history data. A set of fuzzy rules are used to define the relationships between metrics and the ultimate application or subsystem status. This metric history analysis phase may be performed periodically such  
15 that the fuzzy sets are dynamically redefined at periodic intervals. The fuzzy rules are then evaluated using a fuzzy reasoning process and an overall status indication is generated. As system performance or status changes, the monitoring system can adapt by changing the shape of the "normal" fuzzy set based on the distribution of metric values. The rules may remain the same but the fuzzy set may change dynamically. This greatly  
20 reduces maintenance costs since the monitoring rule set can be slowly tuned over time, while the underlying "normal" fuzzy sets could be adjusted as often as needed. Thus, the method and apparatus provide a mechanism to express the knowledge about the key underlying relationships as fuzzy rules and then to automatically tailor the fuzzy sets that are referenced in the fuzzy rules using statistical data mining techniques.